FIG. 1

10

11

FIG. 2

20

21

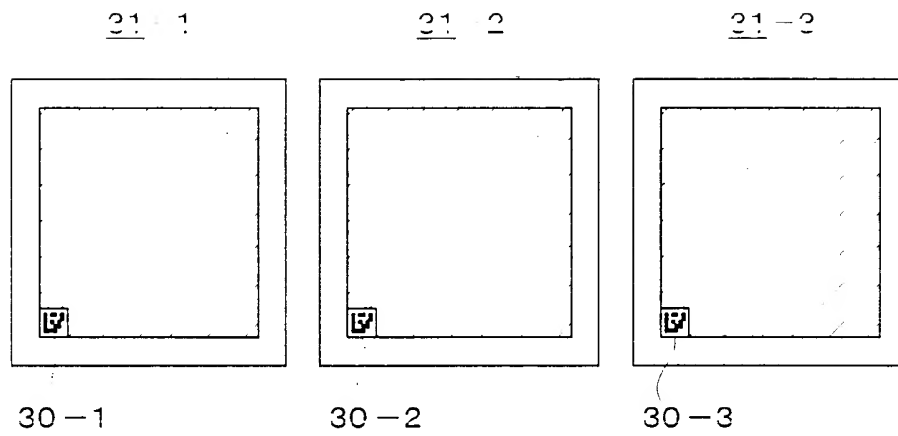1 2 3 4 5 6 7 8 9

23

FIG. 3

31-1   31-2   31-3

30-1   30-2   30-3

FIG. 4

40

| liquid crystal driver | 43 |

| two-dimensional barcode converter | 42 |

| chip ID generating unit | 41 |

FIG. 5

50

53

51

52

FIG. 6

device name
chip size (X)
" (Y)
number of chips (X)
" (Y)
reference chip position (X)
" (Y)
wafer ID
Y coordinate
number of chips
individual chip information
"
"
"
checksum
checksum

device basic information

information corresponding to individual wafers

device name
chip size (X)
" (Y)
number of chips (X)
" (Y)
reference chip position (X)
" (Y)
wafer ID
Y coordinate
number of chips
chip ID 1
chip information
chip ID 2
chip information
checksum
checksum

(a)   (b)

FIG. 7

to probing LAN

72

71

B

73

data server 74

database 75

DB 76

WB 77

printer 78

chip sorter 79

FIG. 8

<u>80</u>

73

76 ~ [DB] ←————————→ [server] ~ 74

S81 ~ ⬚ ————————— lot ID —————————→

transfer wafer mapping
data for one lot
⬚ ~ S82
←—————————————————

t

S83 ~ [perform die bonding
based upon mapping
data]

bonding completed
(one lot)
S84 ~ ⬚ ———————————————————→

FIG. 9

FIG. 11

frame ID
number of chips
chip ID 1
chip ID 2
chip ID N

FIG. 10

100

101

109

102

103

106

107

104

108

105

FIG. 12

chip ID	product code	******
	wafer process flow No.	******
	probing category code	**

process	device type	manufacturing conditions	processing date	processig device	collected data
die bonding	****	bonding conditions ***	****	**	**
wire bonding	****	wiring pattern ***	****	**	**
printing	****	printing pattern ***	****	**	**

FIG. 13

130

FIG. 14

144

142

145

143

141

FIG. 15

150

73

77 — | WB | ←——————————→ | server | — 74
74

S151 — □ —————— lot ID ——————→

transfer lot wiring information
and mapping data
←——————————————□ — S152

t

S153 — | bonding
(wiring) |

▼

S154 — □ ——— bonding completed ——→

FIG. 16

start

take in wiring information and
mapping data corresponding to
lot ID from server — S161

supply chip to bonding stage — S162

recognize chip ID — S163

take out category code from
mapping data based upon chip ID — S164

set chip wiring pattern based
upon category code — S165

category 1   category 2   category N

set wiring   set wiring   set wiring
pattern A1   pattern A2   pattern AN

S166-1   S166-2   S166-N

chip wiring — S167

FIG. 17

FIG. 18

<u>180</u>

73

78 — printer ◄——————► server — 74

S181 — | perform frame ID image recognition |

S182 — ☐ ——— frame ID ——————►
transfer chip IDs within
frame and printing
information for each chip
◄——————————— ☐ — S183

S184 — | print product name and characteristics code from chip ID information corresponding to chip position within frame |

t

printing completed for one frame

S185 — ☐ ——————————————►

FIG. 19

<u>190</u>

73

78 — printer ◄——————► server — 74

S191 — | perform frame ID image recognition |

S192 — ☐ ——— frame ID ——————►
transfer chip IDs within
frame and printing
information for each chip
◄——————————— ☐ — S193

S194 — | print chip ID in addition to product name and characteristics code from chip ID information corresponding to chip position within the frame |

t

printing completed for one frame

S195 — ☐ ——————————————►
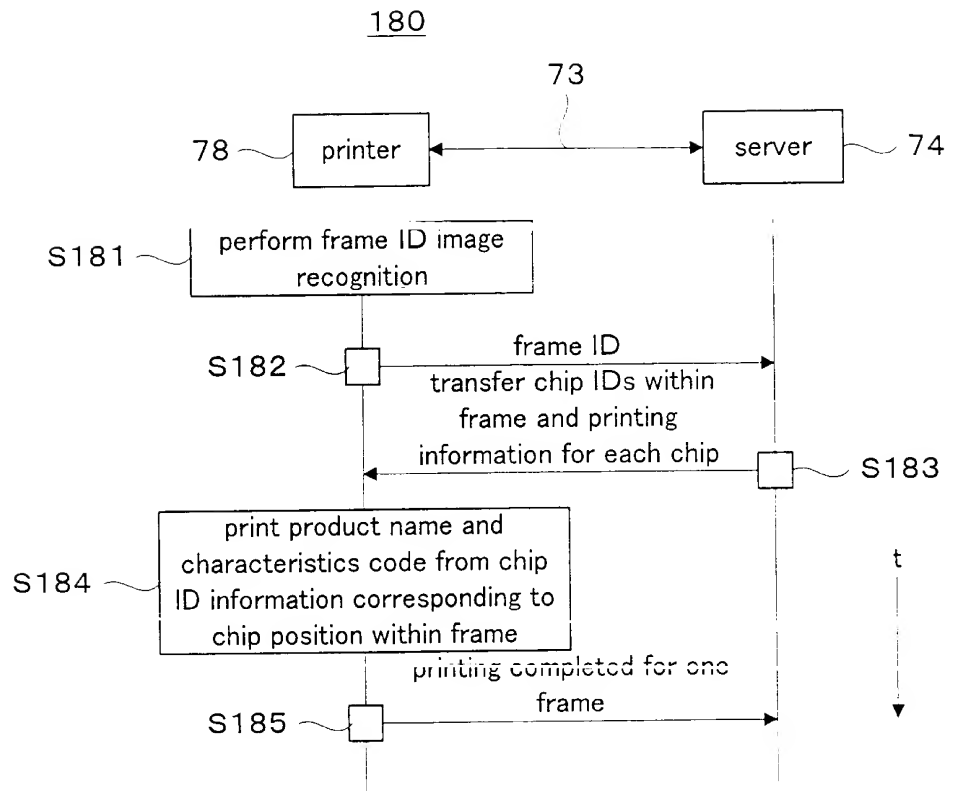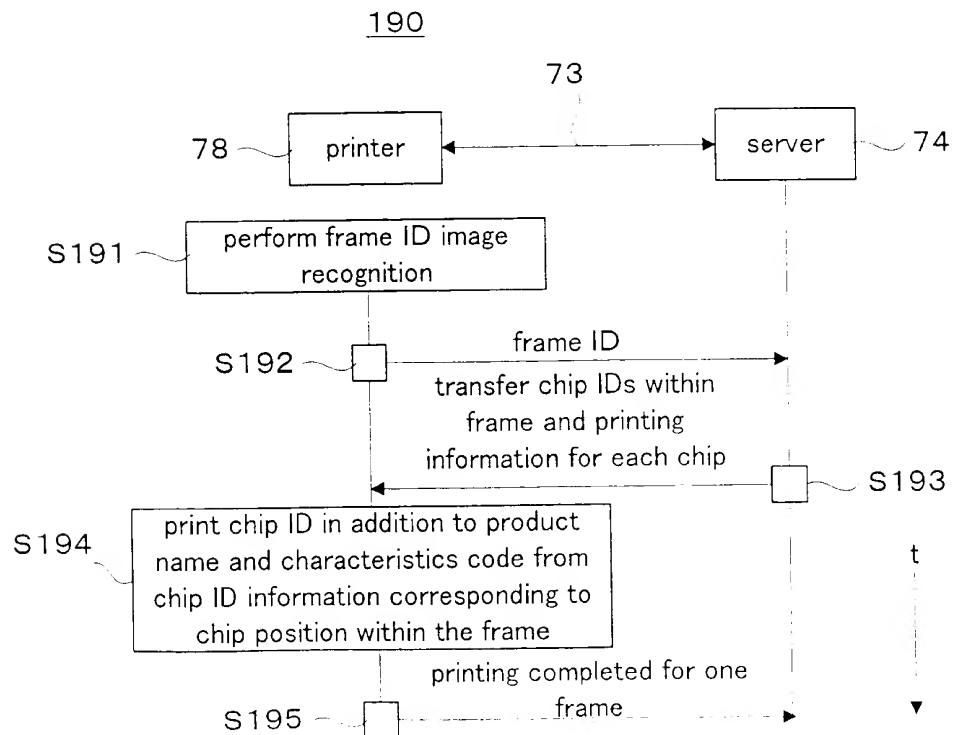
FIG. 20

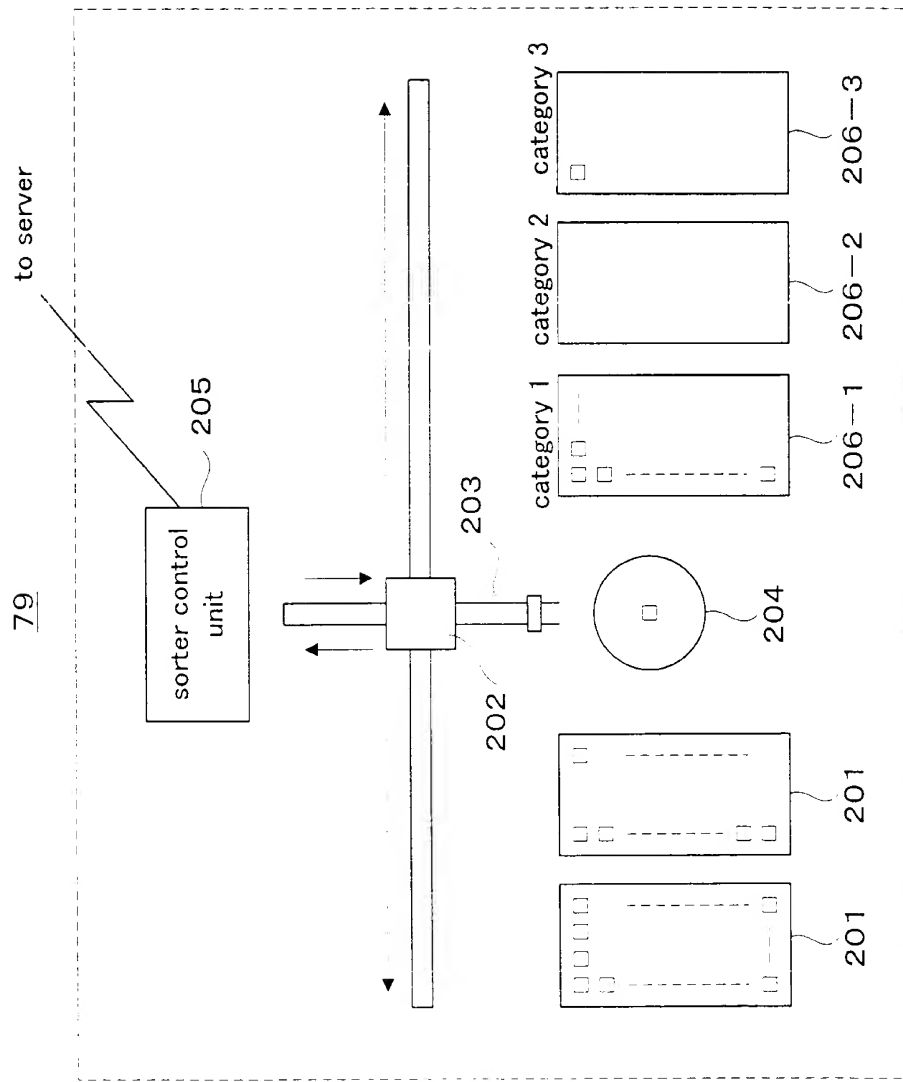## FIG. 21

Chip ID information table

1. wafer process processing history information
2. assembly process processing history information

3. text data
 	
    *probing
    *chip status

FIG. 22

Chip ID information table

1. wafer process processing history information
2. assembly process processing history information

3. text data
 	
    *probing
    *chip status

4. shipping information
 	
    shipping destination
    packaging status
    shipping data

5. post-shipment field claim information   claim history